Why a Year Is All Too Short for a Soldier's Training

Regular Army Officer Shows Futility of the "Million Men Over Night" Preparedness

By MAJOR WILLIAM WALLACE, U. S. A.

MILITARY training is a term much in vogue to-day. Comparatively few of our people know in what such training consists or how absolutely necessary it is to the conduct of modern war.

The antiquated idea that any man in a uniform with a gun is a soldier is distressingly prevalent. The fact is that such a man without at least one year's solid and strict apprenticeship to the skilled trade of arms is very likely to be more of a drawback to his friends than a menace to any creditable foe.

It is asked if a year is necessary for this training. It is all too short in which to learn and have confirmed the multitudinous details in which a trained soldier must be skilled. However, young Americans who have undergone the mental training of the average public school and who enter upon the duty earnestly and willingly will master the rudiments of soldiering in that time, provided they are properly put to it.

To show the nature of the training necessary we will suppose that one hundred thousand young men of the above description had volunteered and assembled for military instruction on one of our great Indian or forest reservations in Arizona or New Mexico, where outdoor work is possible the year round, and ask:

What course would they pursue?

Roughly this:

The first month would be consumed in the recruit's finding himself—a process having many of the aspects of losing himself. He must be divested of every ounce of superfluous baggage and be fitted and provided with uniform and equipment. An uncomfortable pack or pair of shoes are soul destroying afflictions, where if properly adjusted they soon become matters of small concern.

The care of himself, of kit and equipment; when, where and how these are obtained; their cost, his responsibility for them and their arrangement for various inspections are all matters requiring time to learn. Then there are the Articles of War, the application of military justice, his relation to the army, the Government and to civildom to be learned.

There are also the various fatigues (work required other than that which is strictly military) to be explained and performed. From the start setting up exercises and drills without arms must take place and regularity and precision be insisted upon.

The second month the recruit should be given his rifle and the handling and care of it taught. Squad, platoon and company close order drills, calisthenics, swimming, riding, &c., would fill each day with the physical instruction necessary. The study of the vital parts of army regulations, the duties of sentinels on various guards, the carrying and correct delivery of orders and lectures on hygiene and sanitation would consume the rest of the time.

The third month would advance into the battalion and regimental close order drills and ceremonies, the physical exercises continued and first aid, signalling and how to cook for himself would be taken up. Lectures on simple tactics and the relation of the various branches of the service to each other should be given here, and, also, preparatory to the coming month, talks on camp expedients, marching and the use of field ration.

Altogether for the uninitiated no small three months work. For the individual, if not the hardest, they are the most trying.

Homesickness usually sets in, rendering mind and body sensitive and irritable, and, though the ills he is undergoing are mostly imaginary, they are to him none the less real for being so. For this reason these months should be spent in simple barracks and simple comforts provided. Also such barracks would prevent much of the disease usually attendant upon an abrupt change from home to camp life.

A study of our concentration camps during the Spanish war shows that no effort should be spared to make the transition from civil to military employment as gradual as possible. Three months in airy barracks, with an occasional camp, won't prevent all sickness, but will prevent much of it and lessen its severity.

The fourth month would be spent in camp and all that goes to make such a life not only endurable but enjoyable put into effect. Extended order drills should be the rule, with the study and practice of patrolling, scouting, road sketching and general reconnaissance. Short marches without pack should be frequent and lectures and examples given of simple entrenchments, the construction of obstacles, demolitions, the effects of rifle and cannon fire, the knowledge and use of cover and the elements that enter into successful assaults.

The fifth month should have longer marches, light packs and frequent changes of camp site. Simple tactical problems should be solved, with lectures and practice in advance and rear guard actions, outposts and convoy operations. The soldier must know and be familiar with the nature of the duty he is performing in order to act intelligently; for instance, what would be proper action as the point of an advance guard might be suicidal with a convoy, and vice versa.

The sixth month's operations should be by brigade and the marches and problems extended into a terrain of hills, defiles and rivers. Map making, bridging and construction of temporary and permanent intrenchments should be taught and put into effect through simple problems of offence and defence between brigades.

The seventh and eighth months should be devoted to the division, that all important tactical unit upon which battles to-day depend. Hard and zealous preliminary training by all of its components is necessary in order that the division may start unhandicapped.

Here, in war, there is little or no time for individual training. Men, squads, companies, battalions, regiments and brigades must know their business, or confusion reigns and order—that primary requisite of human as well as mechanical machines—fails and ruin results. Moreover, it is in division exercises that officers receive the experience to fit them for actual war. Here their commands become themselves, and they must shoulder the blame for all deficiencies in them, and in the life and death game of war censure for inefficiency is not likely to be long delayed or particularly pleasant when it comes.

After a few division problems intelligent officers and men plainly see that they must keep themselves up to the top notch of efficiency if they are not only to win the cause but save themselves severe and needless suffering. It aids discipline by compelling it throughout all ranks, and discipline is to human masses what cohesion is to the atoms of materials, and as these are soft or hard, weak or strong, in accordance with the intensity of this principle, so are armies in proportion to the strictness of discipline that pervades them.

Discipline is not instinctive, but rather a matter of habit, easily acquired and falling lightly on those who are amenable, but nettlesome often beyond endurance to the egotistical and the vanity stricken. From the very first in the exactions of promptitude, precision and close attention it has been instilled with gradually increasing rigor until in the heaving and straining of that great human mass—the division—it finally becomes confirmed.

Discipline is absolutely indispensable to order, and no matter how intelligent or individually well trained a man may be, as a soldier he is worse than useless—a danger—until he has learned to obey unhesitatingly and without question the orders of his superiors. The superior is responsible, the subordinate isn't, and in division superiors are very likely to have that fact driven home.

It is here also that officers have the opportunity to put into constant practice their absorptions of the class room, and weighing well their knowledge, to separate the essential from the mass of non-essential. In the military art practice is the only true knowledge producer.

The division problems would call into play all the previous training of all the troops. Time off should be devoted to non-commissioned officers' schools for the purpose of familiarizing large classes with army administration, paper work, &c. Not a moment should be lost.

The ninth month should see the command divided into opposing armies of some 50,000 each, operating against each other with all the particularity of actual war in an area large enough to make a small theatre of war, with bases, lines of communication, screens, using heavy and horse artillery, aircraft, pontoons, the wonderful signalling apparatus and the many other devices essential to modern warfare, and which can only be brought into play with great bodies of troops and whose skilled handling can only be perfected in time of peace.

This would be the hard month of forced marches, sleepless nights, of hunger and thirst and dirt, but altogether the most important and interesting, and with the time which peace practice allows for corrections, before it is over the armies should move with clocklike precision. The lives and money this precision would save us in war would compensate the cost, trouble and temporary hardships to attain it in peace a thousand times over.

The study and practice of shooting would occupy the tenth and eleventh months. The idea still prevails that shooting consists in hitting a big black spot on a big white piece of paper a known distance away. Of course this practice is essential in order to teach men the use of sights, positions of firing and general familiarity with his weapon. Further than that it is of small avail in battle firing.

Here the target is rarely visible and the range problematical and to be figured by range finders and communicated to the firers by signals. Results are obtained here, as everywhere else in militarism, only by strict obedience—by discipline—and this is one of the main reasons for placing this part of the training last.

Untrained men will not obey instinctively in the excitement of even a peace field firing problem—not wilfully disobey, but they will not have acquired the habit of attention so essential to intelligent and concerted action. Moreover, at first they would not have been familiar with the signals for movements and firing, and the voice cannot be heard.

As all cannot shoot at once much time during this month can be devoted to reviews of the subjects they have learned and imparting many things to the men which the curriculum of a soldier should include, the rules of warfare, for instance.

In the twelfth and last month examinations should be held which, with due consideration of records made during the year, should determine the standing of every member of the army.

After this the bars should be let down and civilians welcomed and entertained with games, festivities of all kinds, including military exercises and ceremonies.

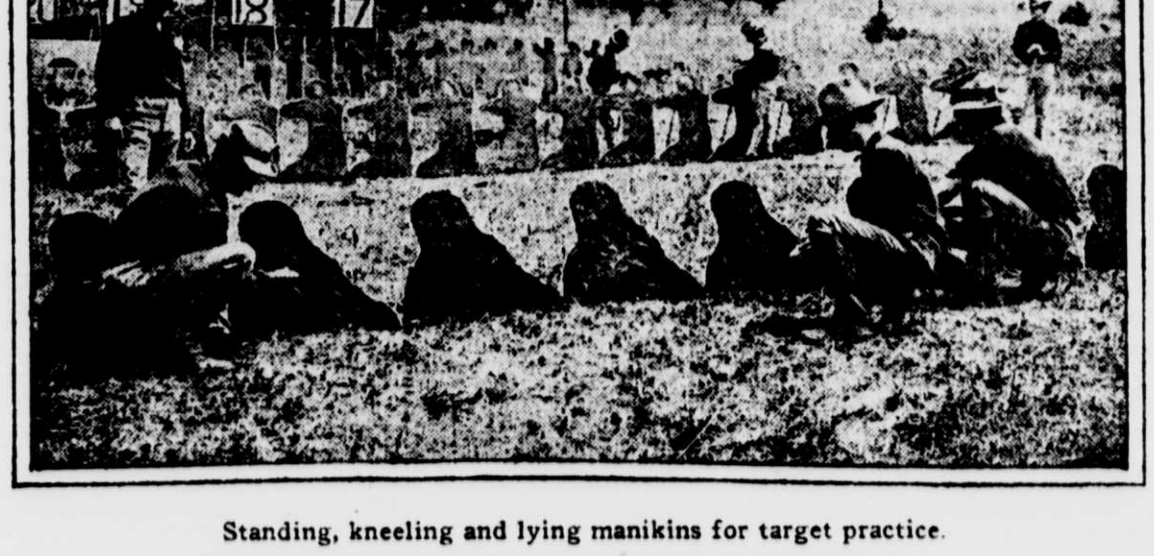
The above by no means embraces the entire range of military training. It comprises only the fundamentals, the foundation, of all soldierly employment. Six months more of hard work will be required to produce creditable cavalry and field artillery, an additional year to perfect signallers and engineers, while to develop aviators and ordnance experts with the burdensome tryout process is never ending. All and not excluding the staffs of the great administration and supply departments should undergo the training prescribed above in order to be efficient in accordance with modern standards.

When it is considered that training, which means preparation before conflict, has become as absolute a principle of war as are order and discipline, and when it is further considered that in the present and future policies of the great nations this principle is recognized to the extent not only of preparing every ablebodied man to instantly take his place in ranks on any call to arms, but that the social, industrial and economic life is so arranged and scientifically adjusted that every ounce of energy in the nation shall be contributory, on occasion, to the nation's military success, it behooves us, as a nation, and in justice to ourselves to consider deeply this selfsame training and no longer in the light of a vogue or a fashion, but as a stern factor now underlying the doctrine of self-preservation.

Cavalrymen being trained in rough riding.

Field artillery men at gun drill.

Infantry at battle practice supported by machine gun.



Standing, kneeling and lying manikins for target practice.

Organizing the Railroads for National Defence

Gen. Leonard Wood Outlines Important Part They Play in the Repelling of Invasion

What Gen. Wood has to say about mobilizing the railroads of the United States is of special significance in the light of the part played by the railways of Europe in the present war. More than one battle has been won through the aid of railroads, and others lost because such lines of communication and supply either failed or were lacking. Fighting forces being equal, victory is likely to go to the army having the greater measure of mobility; and upon railroads will necessarily rest the principal burden of speedy transportation. Gen. Wood is not permitted to discuss any phase of military operations in Europe, but his views concerning the needs of the United States provide material for serious consideration.

GEN. LEONARD WOOD spoke before the Railroad Club of this city a short while ago upon the part the railways of the country might have to play should war be imminent. He addressed a body of men peculiarly fitted to grasp the subject from an administrative point of view, but the public at large has no knowledge of this exchange of expert opinion. This article is intended to enlighten the layman.

"Organizing our railroads for possible military service: what do I think about it?" Gen. Wood began. "I look upon such a move as essential to our national well being.

"While I can't discuss this question with a view to any special application, still, as a general proposition, we all know that the organization of our railroads, or, better, making them ready for mobilization, is one of the most important contributives to national defence.

"The veriest layman knows that only by means of our railroads would it be possible to despatch promptly and to move successfully a considerable body of troops. Not only this, but our capacity to meet a military emergency would of necessity hinge in the first place upon celerity of action.

"The vast area of our country, our long coast lines, all make it most important that our use of the railroads should be upon carefully thought out plans. This includes many a little line which runs to some unimportant place commercially, but important nevertheless from a military standpoint. As C. H. Markham, president of the Illinois Central Railroad, has recently said: 'Protection to be effective must take into account not only accustomed gateways but isolated localities. Branch lines become of importance subtantially equal to main arteries. The fingers are as important as the arm.'

"Not only must the railroads be ready to move men, but also all kinds of supplies—food, guns, ammunition, &c.—must have prompt transportation. The sick and wounded must be carried quickly to the rear, and ample subsistence must move steadily forward from established bases of supply. And then there is the more strictly mechanical side of the problem.

"Clearly the bigger the forces the larger their demand for food and the greater the wastage, and these must be made good. Without an abundance of munitions artillery, &c., would become useless. Admitting this, what then?

"In many foreign countries the railroads are owned by the State, and so their control and use in the hour of national need is a comparatively simple matter. Please notice that I say comparatively, and emphasis should be laid upon that word and not upon simple. But where the railroads are owned and managed by private companies—and there are many of these here—to combine and to operate integrally these various systems would involve a tremendous task. And yet we should be able to do this very thing; indeed, we should have to do it did war threaten. It is therefore evident that we must organize these common carriers.

"Remember, the term mobilize abroad does not mean to create anew. It is not a sudden effort to cast up national resources with a view then to considering how best to distribute those assets for defence. Mobilization means to fit an army already in existence for immediate service and to move those fighting men with the least possible delay to a given objective. In short, it is organization put to the test.

"Organization, in the broadest sense of the word, means not only the army, but all other agencies which may tend to make that arm effective, and this applies to every phase of national life and its resources; the army and the navy are but a part of this. Perhaps I can put this figuratively:

"The sister defensive services may be likened to the cutting edge of a very heavy knife. The mass of steel behind that edge serves to renew it from time to time and to give the edge the rigidity, the strength and the weight needful to carry the stroke through. The organized reserve of men, money and material represents the backing behind that cutting edge. Unless a nation's resources are so organized and are ever ready and available, what are its chances against a foe that has prepared himself thoroughly?

"This is organization in a sense with which we as a people are unfamiliar; and yet if a day of strife come it is against just this sort of preparedness that we should have to measure forces. I don't have to elaborate upon this matter. In this great work of organizing we cannot afford to lose any time in seeking the cooperation of the railroads.

"Normally our rail routes are potent agents in our national development and material betterment. This machinery of peace, which contributes so much to the tide of our prosperity, should be readily adaptable to defensive service if the occasion arise. But this would not be possible with us unless some scheme of general cooperation were agreed upon in advance not only among the roads themselves but as between the roads so united in purpose and the general government; in short, organization in the fullest sense of the word.

"The General Staff of the army has studied this problem from every angle. The officers engaged have been highly trained men, but their work has been done without the aid of the railroads themselves. In a large measure the task has been dealt with from the theoretical point of view. Now we realize the need of the essentially practical consideration of the matter, and this is a very big part of the problem of cooperation and organization. The railroads and our military experts must be brought together and from their joint labors must spring a plan of reciprocal action, a scheme of interdependence that will evolve unity of working and instant readiness on the part of every railroad in the country."

So far Gen. Wood is permitted to go, but there are those in civil life who have also studied the question that believe that something should be done, and be done quickly. Abroad perfection in this department of military efficiency has been secured only by years of preparation and ceaseless arranging of details to fit changing conditions of national life and of progress in the neighboring countries. But in this country the average citizen does not begin to grasp the bigness of such an undertaking. Yet right here in New York there has of late been given more than one significant hint of what might happen in time of menace from without.

The export trade has converged upon certain seaboard cities, and at the same time a great movement of domestic commodities for home consumption has been going on. As a result many terminals are crowded and loaded cars must wait weeks, in some cases, before they can be unloaded, got clear and sent back inland for further service. All this is happening in time of peace. True, the freight movement is to a degree abnormal, but even so it does not compare with the demands that would be put upon railroad lines should war be imminent or actually existing.

In a way the railroads have sought to deal with this congestion by declaring an embargo upon certain exports, such, for instance, as bulky commodities like lumber and flour. And yet these very things would be greatly needed in time of conflict, both for the maintenance of the civil populace and the fighting forces as well as for constructional work incident to the successful prosecution of the defence. At present certain railroads have agreed upon a common course, but in time of war this concert of action should embrace every railroad in the country and include cooperation with the general government in a way that would give due consideration to the civil and military needs of the hour.

To mobilize the railroads it is necessary to make use not only of the mechanical part of their equipment, but of their trained personnel as well. The organization of a railroad is an exceedingly complex thing. The duties of many if not most of the men regularly employed are the result of intimate association and possibly special and long training. The railroad man should use his peculiar skill or knowledge for the national defence and exercise it just where he is most at home. But to do this he must know just what his part is to be when the hour for action arrives. For this new service at his accustomed post he will cooperate with the army authorities, carrying out in the way he knows best the things needful to military ends.

But this cooperation must go further than that of managing existing trunk lines. The authorities must be in a position to build, repair and operate possibly new roads. Lines where there are only single tracks now may have to be doubled or existing routes otherwise amplified so that trains may be rushed to the front and the relatively empty cars be hastened back to the rear or base of supply.

There must be sidings where cars can be run for unloading without interfering with continuous traffic, and these expansions may be called for at out of the way points simply because the enemy may try to take us on the flank instead of attacking at once his ultimate objective—a large seaport. It was just this that Mr. Markham meant when he said "the fingers are as important as the arm." Now we come to an organization of railroad reserves.

As fine and as efficient as is the Engineer Corps of the army, these highly trained men are called upon to do a class of work quite apart from that of railroading. Therefore it is necessary to supplement this corps in time of need by a reserve of men skilled in railroad work of every sort. These civilian specialists of to-day would become part of a definite organization upon the outbreak of war and every field army would need a certain number of them.

Because of their familiarity with railroad construction, bridge building and all manner of repair work, they would know best how to utilize such materials as might be immediately available. The problem would not be alone that of administering or operating well appointed lines. The task would be that of keeping up existing routes laboring under the stress of excessive service as well as the reopening of lines possibly damaged by a foe.

And this leads to the consideration of that form of defence which might involve aggressive operations. For instance, if we should be obliged to go into a foreign country the undertaking for us there would probably be akin to the difficulties we would interpose here to the advance of an enemy. Besides having at hand a force of railroad operators and builders we should have accurate knowledge beforehand of the railroads of the enemy country and their condition, so that we could bring up the necessary materials for replacement or repair with the least possible delay. What stores of railroad equipment are at once to be had, and where? Or, lacking these, at what point can they be produced and rushed to the front in the shortest time? These are questions that must, as far as possible, be anticipated.

As has been said, Gen. Wood was not permitted to give any specific instances, but not long ago an essay appeared in the *Journal* of the Military Service Institution which is well worth quoting from now. In that article Brig.-Gen. Tasker H. Bliss, U. S. A., considered the question of mobilizing the railroads and cited some concrete examples of what has actually happened here in time of peace when trying to transport a small military force destined for expeditionary service. He said:

"In California the department commander received orders during the night to take two regiments of infantry to San Diego. The command with wagon trains, tentage [illegible] tion, rations, forage were [illegible] ready before daylight; it took all that day for the railroads to gather the necessary transportation for one regiment and still longer for the other, and it required from three to four days to move the two regiments an average of less than 500 miles.

"And there is food for grave reflection in this. We often speak of throwing—that's our favorite word for it—throwing great masses of men on this or that frontier threatened with sudden danger. We can stop the pulsation of the blood for only an instant without destroying the life of the organism; and the railroads are the veins and arteries of national life. They are none of them military, that is, none of them has been constructed with a secondary view to commerce and a primary one to military requirements.

"I do not think I state the case too strongly when I say that if word were received that a hostile fleet convoying transports was only half way between Asia and Honolulu [illegible] to the southern coast of California a division of troops with all the necessary supplies for war could not be sent from San Francisco to San Diego in time to meet it, unless every railroad on the Coast were instantly seized by the military and transportation of every passenger and every pound of freight for commercial purposes stopped.

"The railway systems of the United States are an essential part of our military resources and must be first available in time of war. They become as much a part of the military organization as are the ammunition and supply trains of an army. There is no greater problem before us than the working out of a [illegible] orderly handling by railways [illegible] military and civil [illegible] for mobilizing the [illegible] ing them able to move [illegible] est effective [illegible] schemes for the [illegible] mies will be of little [illegible]

SEISMOGRAPH AN ARTILLERY DETECTOR

AN Austrian scientist has discovered a way to make an enemy's guns betray their location, tell their number and register their calibre, and to do these things despite many intervening miles. Wonderful as this seems offhand, simple principles are involved and a mechanism long known is merely modified to fit it to new uses.

The seismograph has been employed for years to register the earth's tremblings due to a readjustment of the massive crust which forms its surface. Of late the seismograph has been made still more acute and earthquakes originating hundreds and even thousands of miles away have been felt by the apparatus and duly recorded in wavering lines upon the paper enveloping a revolving cylinder. In this way the relative intensity, the duration and the approximate remoteness of the disturbances have been automatically detected and registered.

But earthquakes are not the only things that make the ground vibrate, and the tremors are all of them apparently characteristic of their promoting cause. At least that is what Prof. Belar has long believed, and recently he has perfected an apparatus for military service that proves him to have been right.

Early in 1907 this Austrian scientist worked out a plan by which the seismograph was to be used as an artillery detector, and the idea of thus finding out something about the foe appealed very strongly to the Austrian Ministry of War. The matter was referred to the Inspector-General of Artillery and some time later tests were undertaken at Gurkfeld. There Prof. Belar actually obtained by his special apparatus a record of the vibrations propagated through the ground by the firing of heavy guns, and a means of getting a check on distances was secured by taking records at various ranges and with different kinds of weapons, thus acquiring visual standards by which to judge of the remoteness and of the calibre of the far off gun.

Since then Prof. Belar has been patiently developing his instrument, and now he has an outfit that can be carried about in a handbag. Those who have seen the apparatus in service declare that one familiar with the meaning of the records can tell at once what has occasioned the inciting vibration.

A street car makes its own peculiar autographic record, while a rumbling wagon or a field piece traversing a road or street leaves its identifying trace upon the sheet, and the jar due to firing a gun is found to be quite distinct from the tremors set up by the blow of an exploding shell upon the ground. This reverses the telltale performance, because it indicates how an Austrian projectile behaves and whether or not it has found its mark far off in the hidden distance.

Of course the story is plain only to one familiar with the characteristic signatures of the different sorts of earth wave producers. But Prof. Belar has produced a table of signs, and the ordnance officer is expected to know these just as a shorthand writer knows the meaning of his symbols.

In actual service the observer at the seismograph must be able to separate the earth shocks due to his own guns from those created by the enemy's batteries. This difficulty is got over by putting the seismograph man in touch with his own artillery by means of telephone or wireless so that he knows when the guns are to be fired, and he can either throw his instrument out of service for the time being or, better still, separate the tracings made by friendly rifles from those occasioned by the rival weapons.

For years back, and even now, Prof. Belar has been in charge of the Laibach Observatory, where his work has been well nigh exclusively in connection with seismological problems. Laibach is something short of fifty miles from a part of the Austro-Italian battle front. There some of the greatest artillery duels of the world war have been fought and the big Italian siege guns have made the earth tremble so that the vibrations were picked up at far away Laibach.

It happens, however, that the observatory at Laibach has been too remote to identify the character of the attacking ordnance, but at closer range, say within twenty-five miles of the firing line, niceties of detection are possible. It was for this reason that the Austrian scientist labored to produce an efficient and yet a compact instrument that would be relatively so light that it could be easily and speedily transported by hand from point to point.